writer's garden the sparrows are at this moment doing their best to clear the rose-trees of the "green-fly" that infest them, and there can be no doubt that at this season the sparrow is almost entirely insectivorous; at other seasons it is almost equally granivorous; possibly a judicious thinning of sparrows may be salutary, but those who advocate wholesale slaughter should bear in mind the results of the indiscriminate destruction of raptorial birds in these islands.

Miss Ormerod is not always happy in her nomenclature. Excepting in one book there is no such thing known as "*Hybernia prosapiaria*" (p. 5), the specific appellation rightly belonging to an entirely different insect; moreover had she consulted any recent work or list on *Micro-Lepidoptera* she would not have penned the footnote that appears at p. 67.

The illustrations (even if most of them be old and familiar) are good, and add to the usefulness of the Report.

In future Reports we think it deserves Miss Ormerod's consideration whether a meteorological summary in tabular form would not prove a useful addition, compiled especially with regard to the comparative abundance or scarcity of particular injurious species in former years, in connection with the temperature and rainfall in every month of each year.

R. McL.

OUR BOOK SHELF

An Elementary Treatise on the Integral Calculus, containing Applications to Plane Curves and Surfaces; with Numerous Examples. By B. Williamson, F.R.S. (London: Longmans, 1884.)

A WORK by Mr. Williamson is like good wine, and needs no commendation from us. We note that this has reached a fourth edition, but Mr. Williamson does not rest content with what he has already achieved. He has given a touch here, brought out into greater prominence a feature there, and not only so, but he has at last added a new detail in the shape of a chapter on multiple integration. In our notices of former editions we have drawn attention to the absence of such a chapter, and we are glad to see that he has at last introduced what he hopes "will be found a useful addition to the book." We need only remark further that this edition has 393 pages against 375 pages in the third edition.

An Elementary Treatise on Solid Geometry. By Charles Smith, M.A. (London: Macmillan and Co., 1884.)

MR. SMITH has already won his spurs as a mathematical writer by his admirable "Conics." This work, as far as possible, is on the same lines. It is not intended to supersede the classic treatises by Salmon and Frost any more than his former book was to take the place of the splendid work on "Conics" by the former of the above-named writers. A feature in Mr. Smith's treatment of the subject is the early discussion of the different surfaces which can be represented by the general equation of the second degree; and in the way in which these surfaces are here handled we think the student will be much interested. The discussion is full and very clear. An excellent collection of exercises adds much to the value of the book for students: those in the body of the chapters being well fitted to bring the text home to the reader. For the majority of students we should say, "Read Smith's 'Solid Geometry,' and you will not need any other work." Those who wish to penetrate into the inmost recesses will find that they have been helped by the study of this work to attack the masterpieces referred to at the outset of our notice.

A Collection of Examples on the Analytic Geometry of Plane Conics; to which are added some Examples on Sphero-Conics. By R. A. Roberts, M.A. (Dublin University Press Series, 1884.)

WE had the pleasure of noticing with commendation (NATURE, vol. xxvi. p. 197) a previous collection of examples by Mr. Roberts on conics and some of the higher plane curves. This has all the merits of the former work, with, we fancy, increased power and skill in the methods employed. A portion of the exercises is common to both works. Much space is devoted to the discussion of properties of circles connected with a conic, especially of circles having double contact with the curve. Great use is here made, and effectively, of elliptic coordinates. "This method simplifies greatly the study of relations involving the angles of intersection of such systems," *i.e.* as have double contact with two fixed confocal conics, "whose differential equations take a simple form." In all there are fifteen chapters, the last of which treats of sphero-conics; in this chapter also much use is made of elliptic coordinates. The collection is likely to be very serviceable to junior students, and will be convenient for reference generally. After perusal we have not detected, we believe, any errata that will cause such students as can use the book with profit any trouble.

Mineralogy. Vol. II. Systematic and Descriptive. By J. H. Collins, F.G.S. (Collins's Advanced Science Series.) (London and Glasgow: W. Collins, Sons, and Co., 1883.)

THIS little book is not, neither does it profess to be, more than a dictionary of minerals. The names, localities, and general characters are given as briefly as possible; and the work seems to be brought up to latest date.

The only point in which the author lays claim to originality of treatment is the classification, and it is precisely here that exception may be taken to the book, with its system of Pyritoids, Spathoids, Haloids, Plethoids, Brithoids, &c., and partial neglect of isomorphous groups. Cerussite, for example, is grouped with phosgenite instead of with aragonite, witherite, &c.

There are a number of crystal figures, but the notations, where used, are not consistent; and in one case, where the cleavages of barytes are wrongly described, the notation is meaningless.

There are several typographical and other errors which should be corrected in a second edition—*e.g.* "Senaviza" (p. 61) should be "Serravezza"; feather-ore (p. 60) should be referred to jamesonite, and not to berthierite; "eulitite" (p. 239) should be "eulytite."

It can scarcely be expected that the book will be much used by the "practical miners, quarrymen, and field-geologists" for whom it is intended. The other readers for whom the author writes, "students of the science classes," may however find it a useful and compendious book of reference, as containing a very complete list of minerals.

Handbook of Vertebrate Dissection. Part III. "How to Dissect a Rodent." By H. Newell Martin, D.Sc., M.D., M.A., and William A. Moale, M.D. (New York: Macmillan and Co., 1884.)

IN the third of their series of Handbooks of Vertebrate Dissection, Drs. Martin and Moale describe a mammal, taking as a type the common rat.

In spite of the authors' remark in the preface that "he who aspires to become a comparative anatomist, and yet finds a rat too small for the observation of all the main facts in its structure, has mistaken his vocation," we think that, for beginners, a larger mammal would have been preferable—at any rate for those who do not aspire to

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become comparative anatomists, but only wish to gain a little knowledge of Vertebrate anatomy. It is not an easy matter, for instance, for a beginner to dissect out the nerves of the head and neck in so small a mammal as the rat, and even the less delicate dissections can be done much more satisfactorily on a larger animal.

The directions for examination and dissection are clear, but scarcely full enough in some places. The methods given as regards the vascular system, for instance, are somewhat meagre, and the muscles are not touched upon at all. The woodcuts, which illustrate the skull only, are rough, and we fail to see much advantage in giving figures of the skull when the soft parts—illustrations of which are so much more required by the student—are neglected.

It would perhaps have been as well to omit the question as to the homology of the malleus and incus, given on the first page, as recent researches seem to throw so much doubt on this point.

Apart from the defects to which we have called attention, the book is well arranged, and any one wishing to learn from it how to dissect a Rodent will be greatly helped by its systematic directions and accurate descriptions.

A Course of Instruction in Zootomy (*Vertebrata*). By T. Jeffrey Parker, B.Sc., Professor of Biology in the University of Otago. (London: Macmillan and Co., 1884.)

ALTHOUGH the study of biology has advanced very rapidly of late years, there is still a great want of really good text-books in several of its branches. The volume before us, which forms the latest addition to the excellent series of "Manuals for Students," is an attempt to fill up one of the most patent of these gaps, and teachers and students of morphology have alike reason to be grateful to Prof. Parker for the manner in which he has performed his work.

The book consists of a short introduction on the methods of dissection, injection, and preservation of specimens, followed by a series of descriptions of certain typical Vertebrates, with practical directions for their examination by dissection or otherwise. The types described are the lamprey, skate, cod, lizard, pigeon, and rabbit, and have been chosen partly from their intrinsic importance, and partly because they "are mostly such as can be readily obtained at any time of year."

The selection of animals is a judicious one, though we should like to have seen Amphioxus included in the list; the descriptions are clear and accurate, and the practical directions good. The book is of convenient size, well printed, and admirably illustrated by a series of upwards of seventy figures, which, with very few exceptions, are original. Many of these figures, notably those of the lamprey and those of the nervous and vascular systems throughout the book, are of unusual excellence, and both author and publishers deserve much credit for having so fully recognised the necessity of providing new illustrations in place of the old worn-out and often incorrect ones that have disgraced our zoological books for so many years. A few of the figures might with advantage be rather larger and more diagrammatic.

While freely and gratefully acknowledging the merits of the book, which are such as to insure its adoption at once in all morphological laboratories, there are certain features which we think should not escape criticism. Thus the general arrangement of the book might easily be improved: the "indented" paragraphs will certainly be taken for minor rather than major subdivisions; the system of numbering the paragraphs does not appear to us to serve any useful end, and the repetition of the title of the book on every alternate page is simply throwing away a valuable opportunity of facilitating reference.

A far more serious objection, however, is the very small allowance of that "salt of morphological ideas" which Prof. Parker extols in his preface but almost entirely omits to supply us with in the book itself. Thus, although the several types selected are arranged in a progressive series, there is practically no attempt made to compare them with one another, or to direct the student's attention to the modifications undergone by the various organs in advancing from generalised to more specialised types. Again, it is surely a mistake to describe the bones of the skull one by one, without any reference to their positions as regards the morphological elements of which the skull consists, or even the distinction between cartilage bones and membrane bones; and the same objection applies with especial force to the description of the urinary organs.

However, in thus criticising what appears to us its weak side, we are fully aware that we are finding fault with the conceptions which Prof. Parker has had of the type of book wanted rather than with the manner in which he has carried out his own ideas on the subject. As a practical laboratory guide, the "Course of Instruction in Zootomy" is a valuable addition to zoological literature, and one which will certainly meet with ready and large acceptance.

A. M. M.

Van Nostrand's Science Series. Dynamic Electricity. By J. Hopkinson, J. N. Shoolbred, and R. E. Day (New York: Van Nostrand, 1884.)

Dynamo-Electric Machinery. By Prof. Silvanus P. Thompson. (New York: Van Nostrand, 1884.)

THESE latest additions to Van Nostrand's "Science Series" are reprints of pamphlets published in England. The first of the volumes contains a lecture by Dr. Hopkinson, which originally formed one of a series delivered at the Institution of Civil Engineers a year ago; a paper by Mr. Shoolbred, also delivered last year and a little work on electric calculations, drawn up by Mr. Day for the evening science classes at King's College, published in 1882 by Messrs. Macmillan and Co. For the title "Dynamic-Electricity," the American publishers of this medley are alone responsible. The other volume is a reprint of Prof. Thompson's Cantor Lectures, with an introduction by Mr. F. L. Pope. Mr. Pope's idea of editing appears to be to reprint baldly from the unrevised English issue, and to foist into the book two or three large unexplained diagrams of Edison's and Weston's forms of dynamo. We cannot congratulate either the authors or the publishers on the issue of these unauthorised editions.

The Principles and Practice of Electric Lighting. By Alan A. Campbell Swinton. Pp. 172. (London: Longmans, Green, and Co., 1884.)

THIS is a handy and well-written account of the chief kinds of machines and lamps used in electric lighting; perhaps the best of the numerous small works lately published on the subject. It is full of information and in almost every respect up to date, though the chapter on the cost of electric lighting is already more or less put out of date by the progress of invention. The author writes impartially and agreeably. He should not call the "watt" a unit of energy.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.*]

The Rings of Saturn

IN the interesting account of the observations of Messrs. Henry on the rings of Saturn (NATURE, May 29, p. 105) they seem to

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